Charter of the Earth Science Data Systems Standards Process Group (SPG)

Status of this Memo

This memo provides information to the NASA Earth Science community. Distribution of this memo is unlimited.

Change Explanation

Changes since Version 1

Revised section 1 (Introduction) to reflect evolution in standards process as discussed at the Earth Science Data Systems Working Groups meeting November 2006. Other minor editorial corrections throughout.

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Abstract

This memo documents the composition, selection, roles, and organization of the Earth Science Data Systems (ESDS) Standards Process Group (SPG).

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1. Introduction

Future NASA Earth Science data systems will consist of a heterogeneous mix of interdependent components derived from the contributions of numerous individuals and institutions. Participants from these widely varying organizations will be responsible for data management functions including data acquisition and synthesis; access to data and services; and data stewardship.

“An important premise underlying the operation [of the NASA Earth Science network of data systems and services] is that its various parts should have considerable freedom in the ways in which they implement their functions and capabilities. Implementation will not be centrally developed, nor will the pieces developed be centrally managed. However, every part [of the NASA Earth Science network] should be configured in such a way that data and information can be readily transferred to any other. This will be achieved primarily through the adoption of common standards and practices [1].”

The Standards Process Group (SPG) is charged with running NASA's Earth Science Data Systems (ESDS) standards process. The process is inspired by the open review and emphasis on implementation modeled in the Internet Engineering Task Force's (IETF) standards process. ESDS requirements for timeliness and accountability have been incorporated into a tailored process that emphasizes adoption of standards that work. Proposals for standards will be developed by ESDS stakeholders and codified in a “Request for Comments” (RFC).

After an initial evaluation of relevance to NASA ESDS, the SPG will facilitate the gathering of comments on three aspects of the proposed standard: the technical specification required for implementation, readiness for operational use, and usability or suitability of the technology to the uses for which it is proposed. Only when a proposed standard is considered relevant to NASA ESDS, has been shown to have at least two interoperable implementations and has demonstrable operational readiness will it be endorsed as a recommended standard for use in NASA ESDS. Less mature or less widely used technologies, best practices, and other information of interest to NASA ESDS may be documented in 'technical note' RFCs.

NASA participates in many standards bodies and standards development and implementation activities. The SPG is not intended to replace these activities but rather to augment them by providing a venue for linkage to communities of practice. NASA is subject to standards policies as set out in OMB circulars and NASA Policy Directives. Among these are OMB Circular A-119 "Federal Participation in the Development and Use of Voluntary Consensus Standards" [2] and NPD 8070.6B "Technical Standards" [3]. The SPG process for community consensus and recommendation with management oversight is designed to comply with these policies.

The process for getting an RFC published as an ESDS standard is detailed in ESDS-RFC-002, "The ESDS Standards Process" [4]. Information about the preparation of RFCs and policies relating to the publication of RFCs are described in ESDS-RFC-003 "Instruction to RFC Authors" [5].

2. The Goals of the SPG

The charter of the Earth Science Data Systems Standards Process Group (SPG) is to advance the productive use of data systems standards within the NASA ESDS. Through management of the ESDS standards process, the group will direct the adoption of data systems standards relevant to data stewardship, the interoperation of Earth Science data systems and the interoperation of those data systems with NASA's partners, suppliers, and customers consistent with NASA's Earth Science goals.

Through its work the SPG seeks to:

1. Enable data and service providers to easily join NASA's Earth Science network of data systems through use of standards.
2. Facilitate interoperability between components of NASA's Earth Science network of data systems through use of standards.
3. Facilitate data stewardship and preservation through use of standards and adoption of best practices.
4. Develop and manage effective standards recommendation, adoption, and approval processes to guide the evolution of ESDS standards. Support the evolving strategies and goals of NASA's Earth Science activities through use of standards.

The SPG is not an advocate for particular standards. Its purpose is to facilitate the recommendation and adoption of standards that draw from the experience of science and data

systems communities in Earth sciences. This facilitation primarily consists of running the process by which standards recommendations are formed and ensuring communication about proposed and existing ESDS standards.

3. The Players

The players involved in the process include the following:

3.1 NASA's Earth Science Management

The role of NASA's Earth Science management in the process is to perform such financial, legal and logistical tasks as necessary and to act on recommendations from the SPG as appropriate.

3.2 NASA ESDS Program Executive

Throughout this document we refer to the NASA individual charged with overseeing the NASA Earth Science Data Systems Working Groups as the "NASA ESDS Program Executive". The NASA ESDS Program Executive is responsible for final approval for all SPG decisions.

3.3 The Standards Process Group (SPG)

The Standards Process Group (SPG) is the decision-recommending board of the process. SPG decisions have force only with NASA ESDS Program Executive concurrence. The membership of the SPG and their roles are detailed in Sections 4 and 5.

3.4 RFC Editor

The primary process documents are called Requests For Comment (RFCs). The RFC editor is responsible for logistical coordination of an RFC including assuring that RFC submittals follow established standards for content coverage and format and that the RFC library is maintained and is accessible. The editor will work with submitters to advise on content and format, but the ultimate responsibility for providing a sufficient RFC in acceptable format rests with the author(s) of the RFC.

3.5 Technical Working Groups (TWGs)

Technical Working Groups (TWGs) are commissioned by the SPG to perform specific review and evaluation of candidate standards, related implementations, and operational readiness. Membership on a TWG is partially drawn from the SPG membership and partly drawn from technical area experts and/or ESDS community members. The duration of a TWG corresponds to the review schedule set by the SPG for a particular candidate standard. Each TWG will have a chair, appointed by the SPG, to oversee the work of the TWG.

3.6 Process Participants

Process participants are individuals, but they may often act as representatives of stakeholder programs, projects, tasks, or communities affected by standards under consideration. There is no restriction on who may be a Process participant, but direct stakeholders funded by NASA's Earth Science activities necessarily dominate the process of adopting ESDS standards.

3.7 Public

The public includes all process participants, all ESDS stakeholders, and all those who are generally understood to be the "public". Any person may make comment on RFCs under consideration. Specific procedures to ensure fair and appropriate public comment will be developed by the SPG.

3.8 Stakeholders

Stakeholders are those who are materially affected by the work of the SPG. The SPG has a direct interest in stakeholders because the success of standards recommended by the SPG is ultimately determined by the use of those standards by programs, projects, tasks, or other activities directed by or performed by SPG Stakeholders.

4. SPG Membership

The SPG shall be composed of full time staff and part time permanent members from stakeholder activities within NASA's Earth Science activities. These stakeholders include: NASA management, Earth Science mission projects, Earth Science data systems awardees (e.g., REASoN CAN), Earth Science science data providers, and other projects, programs, tasks, activities or organizations identified by NASA.

4.1 Selection of the SPG Members

The SPG membership shall be composed of members from stakeholder organizations and other members. All membership is subject to approval by the NASA ESDS Program Executive.

4.2 Liaison Members

Other agencies (e.g., USGS, NOAA, etc), industry, or other ESDS working groups (e.g., the Software Reuse Working Group, the Metrics Planning and Reporting Working Group, the Technology Infusion Working Group) may appoint liaison members to the SPG.

Liaison members participate in SPG discussions as appropriate to their roles and as designated by the SPG.

Vacancies in the liaison positions do not affect the SPG power to make decisions.

5. The Role of the SPG

The responsibilities of the SPG include:

1. Manage and coordinate activities in the adoption and approval of ESDS standards.
2. Provide leadership and coordination to identify the interfaces or capabilities that need to be standardized across Earth Science data systems.

3. Examine ESDS requirements from NASA HQ, the different mission systems, science and application communities, and external organizations; perform a ground up analyses of different capabilities of existing Earth Science data systems.
4. Coordinate public reviews and evaluations of various candidate standards and their implementations.
5. Form and task TWGs to evaluate candidate standards.
6. Monitor TWGs' activities.
7. Make decisions related to the disposition of standards track RFCs and technical notes in the approval process.
8. Evaluate candidate standards and advise NASA Earth Science management regarding resources needed to adopt and implement standards or to provide technical support for approved standards.
9. Focus on adopting standards implementations that are relevant to NASA's Earth Science network of data systems and that have mature implementations and demonstrable operational readiness.
10. When no mature candidate standard for a defined need can be identified, advise the NASA ESDS Program Executive of need for development.
11. Coordinate document management for all standards track standards and technical notes that come before the SPG.
12. Publicize ESDS standards within NASA Earth Science communities, industry, and external organizations.
13. Coordinate related activities to facilitate the use of standards across NASA's Earth Science data systems, data providers, and data users.
14. Periodically review and evaluate the process as it pertains to meeting the NASA Earth Science mission and, where appropriate, modify the process.
15. Coordinate with other ESDS working groups as identified, such as the Software Reuse, the Metrics Planning and Reporting, and the Technology Infusion Working Groups d by participating as liaison members.

6. SPG Organization

6.1 SPG Chair

The chair of the SPG is appointed by the NASA ESDS Program Executive. The chair shall have authority to manage the activities and meetings of the SPG. The SPG will also have a co-chair from the NASA Earth Science community selected by the members of the SPG and approved by the NASA ESDS Program Executive. The co-chair will work with the SPG chair to manage the activities and meetings of the SPG.

6.2 Decision Making

The SPG attempts to reach all decisions unanimously. If unanimity cannot be achieved, the chair may determine rough consensus by informal polls or other means. SPG recommendations do not use formal or recorded voting.

The SPG makes decisions related to the recommendations for advancement of the RFCs along the standards track. The SPG may approve or disapprove TWGs' recommendations. The SPG will consider public comments, technical factors, and NASA Earth Science programmatic concerns in making decisions.

The SPG may reach decisions by face-to-face meeting, teleconference, Internet communication, or any combination of the above.

SPG decisions for recommendation are then subject to approval by the NASA ESDS Program Executive. Approval or disapproval is expected within 90 days after the SPG publishes the recommendation.

6.3 Openness and Confidentiality

The SPG publishes minutes of all its meetings and all its findings regarding to RFCs on the SPG website.

References

[1] NASA Earth System and Applications Advisory Committee, "NewDISS: A 6- to 10-year Approach to Data Systems and Services for NASA's Earth Science Enterprise," February 2001, NASA document, unpublished, available from http://eos.nasa.gov/seeds/.

[2] CIRCULAR NO. A-119 http://www.whitehouse.gov/omb/circulars/a119/a119.html

[3] NPD 8070.6B http://nodis.gsfc.nasa.gov/npg_img/N_PD_8070_006B_/N_PD_8070_006B__main.pdf

[4] ESDS-RFC-002, The ESDS Standards Process, November 2003

[5] ESDS-RFC-003, Instructions to RFC Authors, November 2003

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Appendix A Glossary of Acronyms

DAAC	Distributed Active Archive Center
CAN	Cooperative Agreement Notice
ESDS	Earth Science Data Systems
ESE	Earth Science Enterprise
NASA	National Aeronautics and Space Administration.
NOAA	National Oceanic and Atmospheric Administration
REASoN	(Earth Science) Research, Education, and Applications Solutions Network
RFC	Request For Comment.
SEEDS	Strategy for the Evolution of ESE Data Systems SEEDS is the name given to the study that produced the initial concept for the ESE standards process. See http://eos.nasa.gov/seeds

SPG	(Earth Science Data Systems) Standards Process Group
TWG	Technical Working Group
USGS	United States Geological Services